CLAIMS

1. A process for the manufacture of storage devices for electrical energy, preferably based on rechargeable lithium polymer cells characterised in that an anode mass of lithium intercalatable carbons in mixture with organic solvents, supporting electrolytes, polymers and/or additives is arranged with a cathode mass of lithium intercalatable heavy metal oxides in mixture with organic solvents, supporting electrolytes, polymers and/or additives with a separator as intermediate layer to form a composite system, the anode mass and the cathode mass being applied to special current conductors.

2. The process according to claim 1 characterised in that the active anode and/or cathode masses are degassed at temperatures between –20 and 200^{0}C, preferably at 20 to 150 ^{0}C and pressures of 10-4 to 10-2 torr.

3. The process according to claim 1 or 2 characterised in that the work is carried out under blanketing gas, preferably argon and/or in the presence of perfluoroalkyl ethers.

4. The process according to claim 1, 2 or 3 characterised in that Li intercalatable, synthetic and/or natural graphites, preferably those with globular structures and/or graphenes, polyphenylenes, polyacetylenes or nano-dimension carbon fibres, preferably with a porous structure and/or in the form of hollow fibres, are used as active electrode masses for the anode in quantities of 50-85 % by weight.

5. The process according to one of claims 1 to 4 characterised in that Li intercalatable oxides of Ti, Zr, V, Cr, Mo, W, Mn, Co, Ni are used as such or in mixture as active electrode mass for the cathode, the intercalation compounds being preferably present in the oriented form with distorted lattice structures and used in quantities of 50-85 % by weight.

6. The process according to one of the preceding claims characterised in that Li compounds such as Li organoborates, LiBF4, LiCl04, LiPF6, Li triflate, Li trifluoromethyl sulphonyl (imide) (methide) (bismethide) or such like are used

as supporting electrolytes in quantities of 10 to 100 %, based on the active electrode materials concerned.

7. The process according to one of the preceding claims characterised in that Li compounds such as Li acetyl acetonate, Li metaborate, Li silicate and naturally occurring representatives such as spodumene, as well as builders such as vermiculite, MgO, BaO, Al2O3, SiO2 and carbon fibres and/or carbon powders are used as additives.

8. The process according to claim 7 characterised in that the additives are impregnated with or jacketed by Li salts.

9. The process according to claim 7 or 8 characterised in that the additives are used in quantities of 0.1 to 30 %, based on the supporting electrolytes.

10. The process according to one of claims 1 to 9 characterised in that alkyl carbonates, glycol ethers, substituted and/or cyclic ureas as well as fluoroethers, with molecular weights of up to 1500 respectively, and also monomers such as divinyl benzene, dimethacrylates and with perfluoroalkyl radicals or ether or carbonate alkyl radicals are used as solvents for dissolving or dispersing the supporting electrolytes or the additives and for expanding the organic polymers.

11. The process according to claim 10 characterised in that the solvent is used in quantities of 1 to 1000 %, based on the supporting electrolytes used.

12. The process according to one of the preceding claims characterised in that polyolefins, polyethylene, polypyrrolidone, polybutenes as well as their homologues and copolymers and moreover polyvinyl ethers as well as polystyrene and copolymers with butadiene or isoprene, preferably anionically produced block polymers as well as SBR rubber, butyl rubber and cis-and/or 1,2 polybutadiene, as well as fluoroelastomers, copolymers and/or terpolymers based on vinylidene fluoride, hexafluoropropene, tetrafluoroethene, perfluoroalkoxy derivatives as well as polyalkylene oxides with capped terminal groups, cyclic ethers (crown ethers) are used as polymer binder PB.

13. The process according to claim 12 characterised in that the polymer binder is used in quantities of 5 to 30 % by weight, based on the active electrode mass respectively.

14. The process according to one of the preceding claims characterised in that films/foils, netting, woven fabric and/or fleece is used as isolating layer between the anode and the cathode.

15. The process according to claim 15 characterised in that the material of the isolating intermediate layer is impregnated with supporting electrolytes, additives and/or solvents on joining of the anode and cathode.

16. The process according to claim 14 characterised in that the isolating intermediate layer contains supporting electrolyte, additive and/or solvent as a result of the manufacturing process.

17. The process according to one of the preceding claims characterised in that the manufacture of the electrode mass takes places stepwise such that the active components concerned are thoroughly mixed and/or ground with the proportional quantities of supporting electrolyte and/or additive and/or solvent and then compounded with the other electrode components.

18. The process according to claim 17 characterised in that mixing and/or grinding takes place in the fluidised bed or the ultrasonic bed.

19. The process according to claim 17 or 18 characterised in that mixing and/or grinding takes place at temperatures of –20 to 200 ^{0}C, preferably of room temperature to 100 ^{0}C.

20. The process according to one of the preceding claims characterised in that the manufacture of the composite system according to the invention of anode/separator/cathode takes place by the electrode mass and the separator mass being present as spreadable, coatable and/or extrudable mixture with solvents, supporting electrolyte, additives and polymers, including the Li intercalatable active components and processed in a continuous, preferably single stage process.

21. The process according to claim 20 characterised in that the electrode masses are applied onto conductors selected from metal foil, carbon fibre fabrics, netting, polyacetylene film, polypyrrolidone film.

22. The process according to claim 21 characterised in that the application takes place by a measure of doctor blade application, coating and extrusion.

23. The process according to one of claims 21 or 22 characterised in that primer-coated Al foil is used as cathode conductor.

24. The process according to one of claims 21 to 23 characterised in that coating takes place on one or two sides.

25. The process according to one of claims 21 to 24 characterised in that the composite system produced is laminated at temperatures ranging from room temperature to 100 ^{0}C.

26. The process according to one of the preceding claims characterised in that the manufacture of the composite as a whole consisting of conductors, electrode masses with the separator intermediate layer takes place continuously or batchwise and/or the manufacture of an Li polymer battery takes places by coating and/or winding with subsequent incorporation into a housing and poling.

27. The process according to one of the preceding claims characterised in that the masses produced are used for electrophoretic systems, diodes or sensors or energy storage devices.